



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/647,297

08/26/2003

Hyun Huh

47881-000003/US

2580

30593

7590

01/09/2009

HARNESS, DICKEY & PIERCE, P.L.C.

P.O. BOX 8910

RESTON, VA 20195

EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/09/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/647,297	<b>Applicant(s)</b> HUH ET AL.	
	<b>Examiner</b> Hai Vo	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-12 and 14-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1794

1. The 112 claim rejections are maintained.
2. The art rejections over Kono et al (US 6,943,138) have been overcome in view of the present amendment. Kono fails to teach the mineral oil uniformly distributed across a surface of a stretched film in view of the process disclosed in Kono. However, the art rejections over Hirayama (US 6,383,564) are maintained.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is technically and legally improper to include an additional element in the polishing pad in view of the close language "consisting of" recited in claim 1. The examiner notes that as the hollow polymeric microelements are embedded in the polymeric matrix, the hollow polymeric microelements can not be part of the polymeric matrix physically and chemically. Accordingly, the 112 rejections are sustained. It is suggested that claim 1 is amended in a manner such that the polishing layer is consisting of a hydrophilic polymeric matrix, liquid non-water soluble microelements and hollow polymeric microelements to avoid the issue of indefiniteness.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1794

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3-5, 7, 9-12, 14 and 16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hirayama (US 6,383,564). Hirayama discloses a composite material comprising a substrate and a porous covering layer formed on the substrate (figure 1). The porous covering layer consists of a hydrophilic polymeric matrix and silicone oil embedded in the polymeric matrix (claim 1, column 4, lines 15-23). The silicone oil is present in the polymeric matrix in an amount of 1 to 30% by weight (column 3, lines 60-65). The silicone oil gives the pores having an average size of 3 microns or less (column 4, lines 40-45). The hydrophilic polymeric matrix includes polyethylene glycol (column 2, lines 47-50). The silicone oil is volatilized to leave micropores (column 4, lines 35-38). It appears that the covering layer is structurally the same as the polishing layer of the present invention, i.e., the silicone oil embedded in the polymeric matrix, the silicone oil being volatilized to leave micropores. Likewise, it is the examiner's position that the same mechanisms will be expected as the covering layer is abraded, i.e., the embedded silicone oil exposed at the surface of the covering layer. The same token

Art Unit: 1794

is applied to the semi-transparency of the covering layer as like material has like property. The porous layer is applied to a camera lens, which is a transparent (column 7, lines 10-15). At column 4, lines 58-65 of Hirayama, "This porous structure is **substantially homogeneous in the direction of the thickness** of the covering layer. Therefore, even if the covering is worn away, **the surface having substantially the same nature as the initial surface makes its appearance**. As a result, there is produced an advantage that its initial performance can be kept for a long time." The passage at least indicates that the open pores are uniformly distributed over the entire surface of the covering layer, including the exterior and interior surfaces of the covering layer. Accordingly, Hirayama anticipates or strongly suggests the claimed subject material.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama (US 6,383,564) as applied to claim 1 above, and further in view of Bernheim et al (US 2004/0137155). Hirayama does not specifically disclose an average molecular weight of the polyethylene glycol. Bernheim, however, teaches a fog resistant coating comprising a polyurethane composition comprising an isocyanate prepolymer and polyethylene glycol having an average molecular weight of 3000 (paragraph 112). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyethylene glycol having an average molecular weight in the range disclosed by Bernheim because such is an intended use of the material and Bernheim provides necessary details to practice the invention of Hirayama.

***Response to Arguments***

9. The art rejections over Hirayama taken individually or in combination with Bernheim et al have been maintained for the following reasons. Applicants contend that Hirayama fails to contemplate, teach or suggest the claimed invention, especially the silicone oil uniformly distributed across a surface of the polishing layer. The examiner respectfully disagrees. The examiner directs Applicants' attention to column 4, lines 58-65 of Hirayama, "This porous structure is **substantially homogeneous in the direction of the thickness** of the covering layer. Therefore, even if the covering is worn away, **the surface having substantially the same nature as the initial surface makes its appearance**. As a result, there is produced an advantage that its initial performance can be kept for a long time." The passage at least indicates that the open pores are uniformly distributed over the entire surface of the covering layer, including the exterior and interior surfaces of the covering layer. Accordingly, the art rejections are sustained. However, the examiner notes that the Hirayama covering layer has the open pores uniformly distributed over its entire surface. Should the claim be further amended in a manner such that the open pores defined by the embedded liquid microelements are uniformly distributed across an exterior surface of the polishing layer and the open pores are not present in an interior surface of the polishing layer, the amendment will be effective to overcome the issue of anticipation.

***Conclusion***

**10. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/

Primary Examiner, Art Unit 1794